

FIVE NEW SPECIES OF MYRTACEAE FROM ECUADOR

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ABSTRACT

Five new species of Myrtaceae from Ecuador are described and illustrated: ***Calyptranthes compactiflora***, ***C. fusca***, ***C. sparsiflora***, ***Myrcia aequatoriensis***, and ***M. verticillata***.

RESUMEN

Se describen y se ilustran cinco especies nuevas de Myrtaceae del Ecuador: ***Calyptranthes compactiflora***, ***C. fusca***, ***C. sparsiflora***, ***Myrcia aequatoriensis*** y ***M. verticillata***.

INTRODUCTION

Among the Myrtaceae from Ecuador, there are approximately 30 species of *Calyptranthes* and ca. 40 species of *Myrcia*, including many new taxa (Holst 1999; Kawasaki & Holst 2005; Holst & Kawasaki 2006, 2008). In preparation of the Myrtaceae treatment for the Flora of Ecuador, five additional new species of these genera are herein described: *Calyptranthes compactiflora*, *C. fusca*, *C. sparsiflora*, *Myrcia aequatoriensis*, and *M. verticillata*.

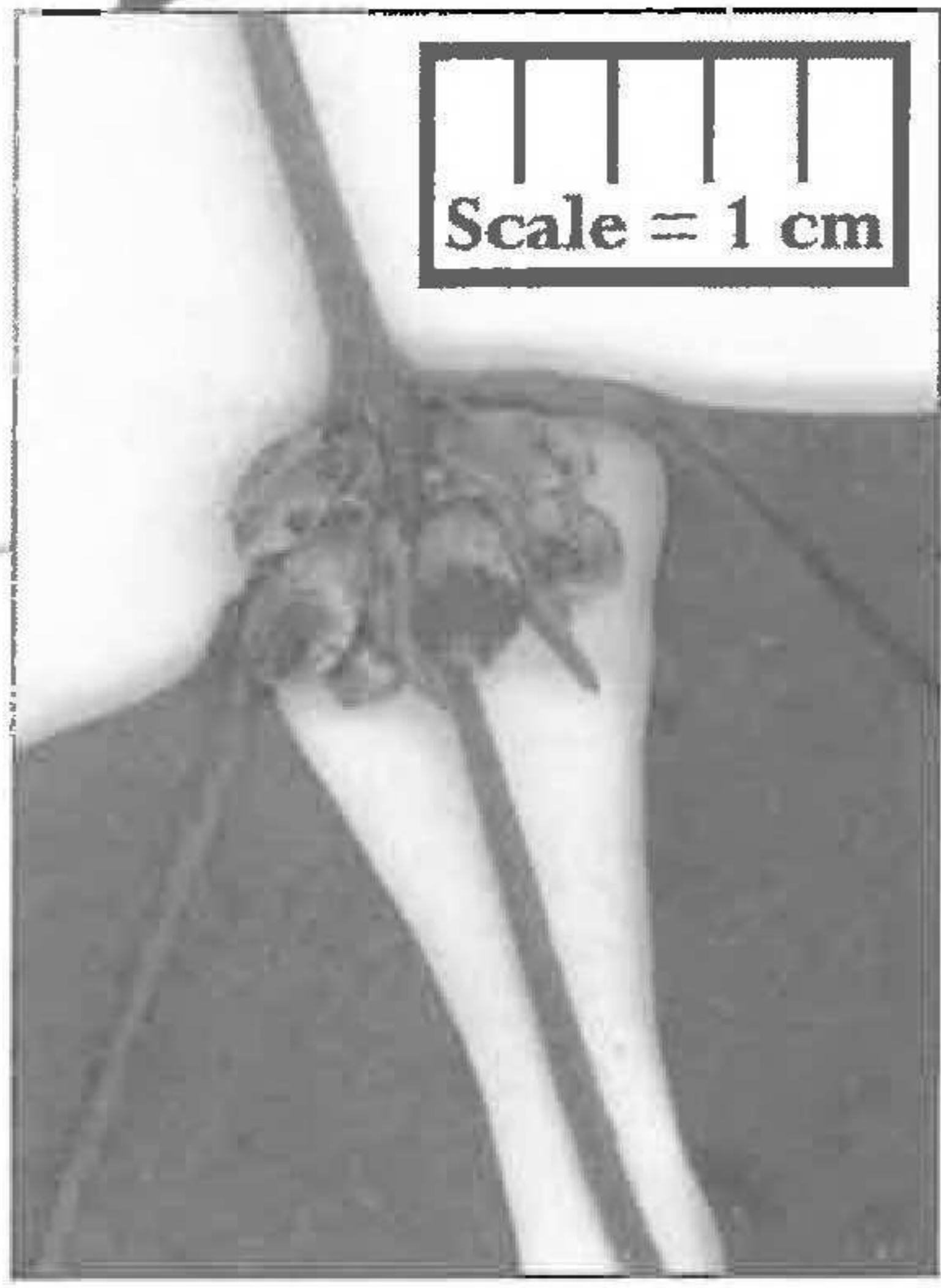
Calyptranthes compactiflora M.L. Kawasaki & B.K. Holst, sp. nov. (**Fig. 1**). TYPE: ECUADOR. SUCUMBÍOS (Napo on label): downstream Río Cuyabeno from Laguna de Cuyabeno to Puerto Bolívar, 00°03'S, 76°10'W, 250 m, 14 Apr 1980 (bud), J. Brandbyge, E. Asanza & L. Reib 30543 (HOLOTYPE: AAU; ISOTYPES: F, QCA, SEL).

Arbor, indumento rufo-brunneo, ferrugineo vel flavo-brunneo; ramulis teretis; foliis anguste ellipticis vel ellipticis, chartaceis, 5–8 × 1.8–3 cm, abrupto-acuminatis, siccatis atrobrunneis; paniculis valde abbreviatis, compactifloris; alabastris clausis 3–4 mm longis.

Tree ca. 4 m tall, the trichomes dibrachiate, reddish-brown, ferruginous to yellowish-brown; branchlets terete, appressed-pubescent. **Leaf blades** narrowly elliptic to elliptic, chartaceous, 5–8 × 1.8–3 cm, the upper surface drying dark-brown, glabrous and lustrous, indistinctly or impressed-punctate, the lower surface reddish-brown in drying, sparsely appressed-pubescent, distinctly dark-punctate; midvein impressed above, convex below; lateral veins 35–40 pairs, parallel, scarcely raised on both surfaces; marginal vein 1, ca. 1 mm from the margin, equaling the lateral veins in prominence; apex abruptly acuminate, the acumen to ca. 1.3 cm long; base cuneate; petioles 5–9 mm long, channeled, puberulous, blackish. **Inflorescences** of paired, very abbreviate panicles appearing glomerulate by the reduction of the main axes, axillary, with up to ca. 6 flowers, the peduncle 1–2(–10) mm long, pubescent; bracts lanceolate, 3–5 mm long, appressed-pubescent, early deciduous; bracteoles ovate, ca. 2 mm long, appressed-pubescent, deciduous. **Flowers:** buds closed, obovoid, 3–4 mm long, sessile, appressed-pubescent, glabrescent, the hypanthium furfuraceous, yellowish-white; calyptra obtuse to shortly apiculate, sparsely pubescent; petals absent; disk ca. 2 mm diam., glabrous; stamens numerous, ca. 2–3 mm long, the anthers ca. 0.5 mm long; style ca. 2 mm long; ovary 2-locular; ovules 2 per locule. **Fruits** not seen.

Distribution.—Known only from the type collection from northeastern Ecuador in the Río Cuyabeno region, in riverside forests at 250 m elevation.

Calyptranthes compactiflora is readily recognized by the greatly reduced inflorescences, also seen in *C. smithii* McVaugh, a species known only by the type collection from Guyana. These two species may be distinguished by leaf characters: in *C. compactiflora*, the leaves are chartaceous, 5–8 × 1.8–3 cm, the midvein



HERBARIUM JUTLANDICUM (AAU)
 BOTANIK INSTITUT
 ÅRHUS UNIVERSITET

Field Museum of Natural History (F)
 Holotype of
Calyptanthes compactiflora M.L. Kawasaki & B.K. Holst, sp. nov. 1980.

FLORA OF ECUADOR
 Collected by J. Brandbyge, E. Asarna C. & L. Rebb
 No. 30543 *Myrtaceae*
 ? *Calyptanthes*
 det. J. Rebb, 87
 Prov. Napo:
 Downstream Rio Cuyabeno from Laguna de Cuyabeno to
 Puerto Bolivar, Riverside forest. Alt. c. 250 m.
 (c. 75°13-10'W 0°3-6'S) April 14, 1980.
 Small tree 4 m. Leaves: upper surface lustrous green,
 lower surface pale-green. Fruits whitish green.
 Wood collection in AAU.
 Botanical Institute, University of Aarhus, Denmark (AAU). Plant collected by L.D. Holst-Nielsen and S. Elgaard
 in collaboration with P. Universidad Católica (UCA) and Museo Ecuatoriano de Ciencias Naturales (MUCN), Quito.

FIG. 1. *Calyptanthes compactiflora* M.L. Kawasaki & B.K. Holst (Brandbyge et al. 30543: Holotype, AAU; inset from isotype at SEL).

is clearly impressed above, and the petioles are 5–9 mm long; in *C. smithii*, the leaves are coriaceous, 9–12 × 3.5–4.5 cm, the midvein is plane to impressed above, and the petioles are 10–13 mm long.

Calyptranthes fusca M.L. Kawasaki & B.K. Holst, sp. nov. (**Fig. 2**). TYPE: ECUADOR. CARCHI: Tulcán Cantón, Parroquia Tobar Donoso, Sector Sabalera, Reserva Indígena Awá, 01°00'N, 78°24'W, 650–1000 m, 19–28 Jun 1992 (fl), G. Tipaz, J. Zuleta & N. Guanga 1438 (HOLOTYPE: QCNE; ISOTYPES: F, MO, SEL).

Arbor, indumento flavescenti; ramulis teretis; foliis anguste ellipticis, ellipticis vel oblanceolatis, chartaceis, 5.5–14 × 3–5 cm, abrupto-acuminatis, siccatis atrobrunneis; paniculis paucifloris; alabastris 1–3 mm longis, petalis nullis; baccis globosis, atropurpureis.

Tree 10–20 m tall, 15–40 cm dbh, the trichomes dibrachiate, yellowish; branchlets terete, puberulous. **Leaf blades** narrowly elliptic to elliptic, or oblanceolate, chartaceous, 5.5–14 × 3–5 cm, drying dark-brown to brownish above, paler below, glabrous on the upper surface, sparsely appressed-pubescent to glabrous on the lower surface, the trichomes located especially along venation; glands distinctly dark-brown, plane above, salient below, also on venation, branchlets, and inflorescences; midvein impressed above, convex below; lateral veins 10–15 pairs, impressed above, salient below; marginal veins 2, the innermost arched, 3–5 mm from the margin, similar to the lateral veins in prominence, the outermost less prominent, parallel to the margin, ca. 1 mm from it; apex abruptly acuminate, the acumen 1–1.5 cm long; base cuneate to obtuse; petioles 5–10 mm long, channeled, sparsely pubescent, blackish. **Inflorescences** of paired panicles, subterminal or axillary, with up to ca. 20 flowers, 2–8 cm long, the branches densely appressed-pubescent, gland-dotted; bracts ovate, ca. 2 mm long, puberulous, early deciduous; bracteoles lanceolate, ca. 1 mm long, puberulous, deciduous. **Flowers:** buds closed, obovoid to subglobose, of very different sizes, 1–3 mm long, sessile, the lateral flower buds of the terminal triads apparently abortive; hypanthium prolonged ca. 1 mm beyond the ovary, glabrous; calyptra obtuse to minutely apiculate, glabrous; petals absent; disk ca. 2 mm diam., glabrous; stamens numerous, ca. 4–5 mm long, the anthers ca. 0.3 mm long; style ca. 5 mm long; ovary 2-locular; ovules 2 per locule. **Fruits** berries 1–2 cm diam., globose, crowned by the hypanthium scar, dark-purple, glabrous, prominently gland-dotted, the pericarp thick and hard; seed 1, ca. 9 × 7 mm, the seed coat membranous; embryo myrcioid, the cotyledons leafy and folded, the radicle elongate, equaling the cotyledons in length.

Distribution.—Known from several collections from northwestern Ecuador of the same area (Reserva Etnica Awá) in the provinces of Carchi and Esmeraldas, in humid, lowland to premontane forests at 200–1600 m elevation. The wood is utilized for ax handles and other tools (Tipaz *et al.* 1290) and the edible fruits to cure diarrhea (Tipaz *et al.* 1233). Common names are recorded as “ungal nusma” (Tipaz *et al.* 1290), “unga lusma” (Tipaz *et al.* 1438), and “pishuilde” (Tipaz *et al.* 1126).

The leaves of *Calyptranthes fusca* and *C. cuspidata* DC., a species from Amazonian Brazil and Peru, are morphologically similar and dark-brown in drying. *Calyptranthes fusca* is distinguished from *C. cuspidata* by having the leaves with impressed (vs. convex) midveins above, conspicuous (vs. inconspicuous) and dark glands on both surfaces, along the venation and on the inflorescence axes, and relatively few-flowered (vs. multiflorous) panicles. The varying size of the flower buds is unusual in the family.

Additional collections examined: **ECUADOR. Carchi:** Maldonado, Parroquia Tobar Donoso, Reserva Etnica Awá, Sabalera, 00°55'N, 78°32'W, 900 m, 22 Nov 1992 (fr), *C. Aulestia et al.* 658 (F, MO, QCNE, SEL). Tulcán Cantón, Parroquia Tobar Donoso, Sector El Baboso, Reserva Indígena Awá, 00°53'N, 78°00'W, 1600 m, 3 Oct 1991 (fr), G. Tipaz *et al.* 310 (F, MO, QCNE, SEL). Tulcán Cantón, Parroquia Chical, Sector Gualpi medio, Reserva Indígena Awá, 01°02'N, 78°16'W, 1000 m, 23–27 May 1992 (fr), G. Tipaz *et al.* 1126 (F, MO, QCNE, SEL). Tulcán Cantón, Parroquia Tobar Donoso, Sector Sabalera, Reserva Indígena Awá, 01°00'N, 78°24'W, 650–1000 m, 19–28 Jun 1992 (fr), G. Tipaz *et al.* 1233 (F, MO, QCNE, SEL). Tulcán Cantón, Parroquia Tobar Donoso, Sector Sabalera, Reserva Indígena Awá, 01°00'N, 78°24'W, 650–1000 m, 19–28 Jun 1992 (fl), G. Tipaz *et al.* 1290 (F, MO, QCNE, SEL). **Esmeraldas:** San Lorenzo Cantón, Parroquia Mataje, Reserva Etnica Awá, Centro Mataje, on the banks of Río Mataje, 01°08'N, 78°33'W, 200 m, 21 Sep 1992 (fr), *C. Aulestia et al.* 551 (F, MO, QCNE, SEL). San Lorenzo Cantón, Parroquia Mataje, Reserva Etnica Awá, Centro Mataje, on the banks of Río Mataje, 01°08'N, 78°33'W, 200 m, 21 Sep 1992 (fr), *C. Aulestia et al.* 568 (F, MO, QCNE, SEL).

Calyptranthes sparsiflora M.L. Kawasaki & B.K. Holst, sp. nov. (**Fig. 3**). TYPE: ECUADOR. SUCUMBÍOS: Lago Agrio Cantón, Reserva Cuyabeno, Laguna Canangueno, 00°02'S, 76°13'W, 230 m, 18 Nov 1991 (fl), W. Palacios, G. Tipaz, D. Rubio, E. Gudiño & C. Aulestia 9126 (HOLOTYPE: QCNE; ISOTYPE: MO, SEL).



ECUADOR

Field Museum of Natural History (F)

Isotype (F)

Calyptranthes fusca M.L. Kawasaki & B.K. Holst, sp. nov. fide

MYRTACEAE
Calyptranthes

CARCHI: Tulcan Canton
Parroquia Tobar Denoso, Sector
Sapalera, Reserva Indígena Awá.
Mosque primario Noroeste Gasa Comunal.
Bosque muy húmedo Premontano.
78°24'W 01°00'N 650-100 m

Árbol de 15 m de altura, 30 cm DBP. En
bosque primario, suelo amarillo.
Botones florales verdes. Utilizado en
manos de herramientas. Nombre común:
anga lusma

19-25 Junio 1992
Galo Tipaz, J. Zuñiga & N. Guanya 1438
HERBARIO NACIONAL DEL ECUADOR (QCNE)
MISSOURI BOTANICAL GARDEN HERBARIUM (MO)

Nº 2284711

FIELD MUSEUM
OF
NATURAL HISTORY

FIG. 2. *Calyptranthes fusca* M.L. Kawasaki & B.K. Holst (*Tipaz et al. 1438*: Isotype, F; inset from isotype at SEL).

MISSOURI
BOTANICAL GARDEN
HERBARIUM
No 04821385



Field Museum of Natural History (F)

Isotype of:

Calyptranthes sparsiflora M.L. Kawasaki & B.K. Holst, sp. nov. ined.

Ecuador

MYRTACEAE
Eugenia

SIEMBRADOS Lago Agrio Canton
Reserva Chivabano, Laguna Canangüero,
Bosque húmedo Tropical. Bosque
primario sobre suelo bien drenado.
76°13'W 00°02'S 200 m

Arbol de 4 m de altura; 5 cm DAP.
Flores viejas.

-SEL

Walter Palacios & 18 noviembre 1991
Tacas, Rubio, Sudio, Aulestia 9126
HERBARIUM NACIONAL DEL ECUADOR (ROME)
MISSOURI BOTANICAL GARDEN HERBARIUM (MO)

Fig. 3. *Calyptranthes sparsiflora* M.L. Kawasaki & B.K. Holst (*Palacios et al.* 9126: Isotype, MO; inset from isotype at SEL).

Frutex vel arbor, indumento rufo-brunneo; ramulis carinatis; foliis anguste ellipticis, chartaceis, 4–6.5 × 1.5–2.5 cm, caudato-acuminatis; inflorescentiis 1 vel 3 floris, dense appresso-pubescentibus; baccis globosis.

Shrub or tree 1.5–4 m tall, the trichomes dibrachiate, reddish-brown, to 0.5 mm long; branchlets bicarinate, thinly appressed-pubescent to glabrous. **Leaf blades** narrowly elliptic, chartaceous, 4–6.5 × 1.5–2.5 cm, the upper surface drying olive-green to dark-brown, glabrous, indistinctly or impressed-punctate, the lower surface light-brown in drying, sparsely appressed-pubescent, minutely punctate; midvein impressed above, convex below; lateral veins 30–40 pairs, parallel, scarcely raised on both surfaces; marginal vein 1, 0.5–1 mm from the margin, equaling the lateral veins in prominence; apex caudate-acuminate, the acumen to ca. 1.5 cm long; base obtuse to cuneate; petioles 1–3 mm long, channeled, puberulous. **Inflorescences** paired, subterminal, with 1 or 3 subsessile flowers, borne at the end of a 1.3–2.8-mm long peduncle, densely appressed-pubescent; bracts and bracteoles early deciduous, not seen. **Flowers:** buds not seen, the hypanthium 1.5–2 mm long, densely appressed-pubescent; calyptra ca. 1 mm long, shortly apiculate, densely to loosely appressed-pubescent; petals not seen; disk ca. 2 mm diam., glabrous; stamens not seen expanded, the anthers ca. 0.3 mm long; style ca. 7 mm long. **Fruits** berries, immature, globose, 8–9 mm diam., yellow, appressed-puberulous, the trichomes located especially at the base and by the hypanthium scar; seed 1, ca. 8 × 7 mm, the seed coat membranous; embryo myrcioid, the cotyledons leafy and folded, the radicle elongate, equaling the cotyledons in length.

Distribution.—Known from eastern Ecuador in Sucumbíos and Pastaza provinces, in primary rain forests at 200–230 m elevation.

Calyptranthes sparsiflora is characterized by the very reduced, 1- or 3-flowered inflorescences, that are densely appressed-pubescent with reddish-brown trichomes. Among the species from Ecuador, it resembles *C. bipennis* O. Berg on branchlet, leaf, and inflorescence morphology. These two species may be distinguished by the presence of indumentum on young vegetative growth, leaves, inflorescences, flowers, and fruits in *C. sparsiflora* (vs. mostly glabrous in *C. bipennis*).

Additional collection examined: **ECUADOR. Pastaza:** Lorocachi, SW of the military camp, 01°38'S, 75°58'W, 200 m, 26 May 1980 (fr), J. Jaramillo et al. 31106 (AAU, F, QCA).

Myrcia aequatoriensis M.L. Kawasaki & B.K. Holst, sp. nov. (**Fig. 4**). TYPE: ECUADOR. SUCUMBÍOS: Reserva Faunística Cuyabeno, Laguna Grande and surroundings, including Río Cuyabeno from Puerto Bolívar to above Laguna Canangueno, 00°00'S, 76°10'W, 265 m, 11 Mar 1990 (fl), H. Balslev, C.C. Berg, M. Gavilanes, A. Thygesen, D.E. Christensen, L. Ellemann & R. Brucculeri 97496 (HOLOTYPE: AAU; ISOTYPES: ASU, F, QCA, SEL).

Frutex vel arbor, indumento flavescenti vel cano-flavescenti; ramulis teretibus; foliis lanceolatis, chartaceis, 5.6–14 × 1.6–3 cm, longi acuminatis, basi obtusis; paniculis axibus gracilibus; baccis ellipsoideis.

Shrub or tree 2–10 m tall, the trichomes simple, yellowish to yellowish-white; branchlets terete, densely pubescent when young, peeling in thin strips when slightly older. **Leaf blades** lanceolate, 5.6–14 × 1.6–3 cm, membranous to chartaceous, the upper surface glabrous except for the midvein, drying olive-green to brownish, the lower surface paler, sparsely appressed-pubescent, the trichomes present especially along the venation; apex long-acuminate; base obtuse; midvein impressed above, pubescent, convex below; lateral veins 20–30 pairs, impressed above, sharply convex below; marginal vein 1, to ca. 1 mm from blade margin, indistinct above, slightly salient below; glands numerous, indistinct or minutely punctiform on both surfaces; petiole 1–3 mm long, channeled, densely pubescent. **Inflorescences** paniculate, axillary or mostly subterminal, with to ca. 20 flowers, 3–6.5 cm long, the axes appressed-pubescent, filiform; bracts and bracteoles early deciduous, not seen. **Flowers** 5-merous; buds obovoid to subglobose, 2–3 mm long; calyx-lobes triangular, to 1 mm long, appressed-pubescent without, glabrous within; petals suborbicular, ca. 2 mm diam., sericeous without; stamens numerous, the filaments ca. 3–4 mm long, the anthers ca. 0.3 mm long; style ca. 4 mm long, the stigma punctiform; hypanthium not prolonged beyond the ovary, sericeous without; disk ca. 2 mm diam., densely pubescent; ovary 2-locular; ovules 2 per locule. **Fruits** (immature) berries, ellipsoid, ca. 10 × 8 mm, crowned by the persistent calyx lobes, yellow, gland-dotted, puberulous



FIG. 4. *Myrcia aequatoriensis* M.L. Kawasaki & B.K. Holst (*Balslev et al.* 97496: Holotype, AAU; inset from isotype at SEL).

to glabrous; seed 1, ca. 8 × 7 mm, the seed coat membranous; embryo myrcioid, the cotyledons leafy and folded, the radicle elongate, equaling the cotyledons in length.

Distribution.—This species is known from a few collections from Sucumbíos (Reserva Faunística Cuyabeno) in northeastern Ecuador, and one collection from Imbabura in northwestern Ecuador; it occurs in lowland tropical rainforests at 220–500 m elevation.

Myrcia aequatoriensis belongs to sect. *Myrcia*, among the group of species related to the *M. fallax* (Rich.) DC. – *M. splendens* (Sw.) DC. complex. These species are separated by characters of the indumentum, leaf morphology, including venation and glands, inflorescences, and size of flower buds (McVaugh 1969). From this group, *M. aequatoriensis* is distinguished by the combination of these characters: lanceolate, thin, subsessile leaves, long-acuminate at the apex, obtuse at the base, with impressed lateral veins on the upper surface, and by delicate panicles with filiform axes.

Additional collections examined: **ECUADOR. Imbabura:** Lita, 501 m, 28 Apr 1949 (fr), *M. Acosta Solís* 12296 (F). **Sucumbíos:** Reserva Faunística Cuyabeno, Laguna Grande and surroundings, including Río Cuyabeno from Puerto Bolívar to above Laguna Canangueno, 00°00'S, 76°10'W, 265 m, 11 Mar 1990 (fl), *H. Balslev et al.* 97071 (AAU, QCA). Reserva Faunística Cuyabeno, Laguna Grande and surroundings, including Río Cuyabeno from Puerto Bolívar to above Laguna Canangueno, 00°00'S, 76°10'W, 265 m, 11 Mar 1990 (fl), *H. Balslev et al.* 97217 (AAU, ASU, F, QCA, SEL). Estación Científica Cuyabeno, 220 m, 21 Jul 1992 (fr), *J. Jaramillo* 14913 (NY, QCA). Reserva Faunística Cuyabeno, 1 ha plot ca. 1 km N of Laguna Grande and surroundings, 00°00'S, 76°12'W, 265 m, 11 Apr–10 Jun 1988 (st), *A.D. Poulsen* 78348 (AAU-2 sheets, QCA).

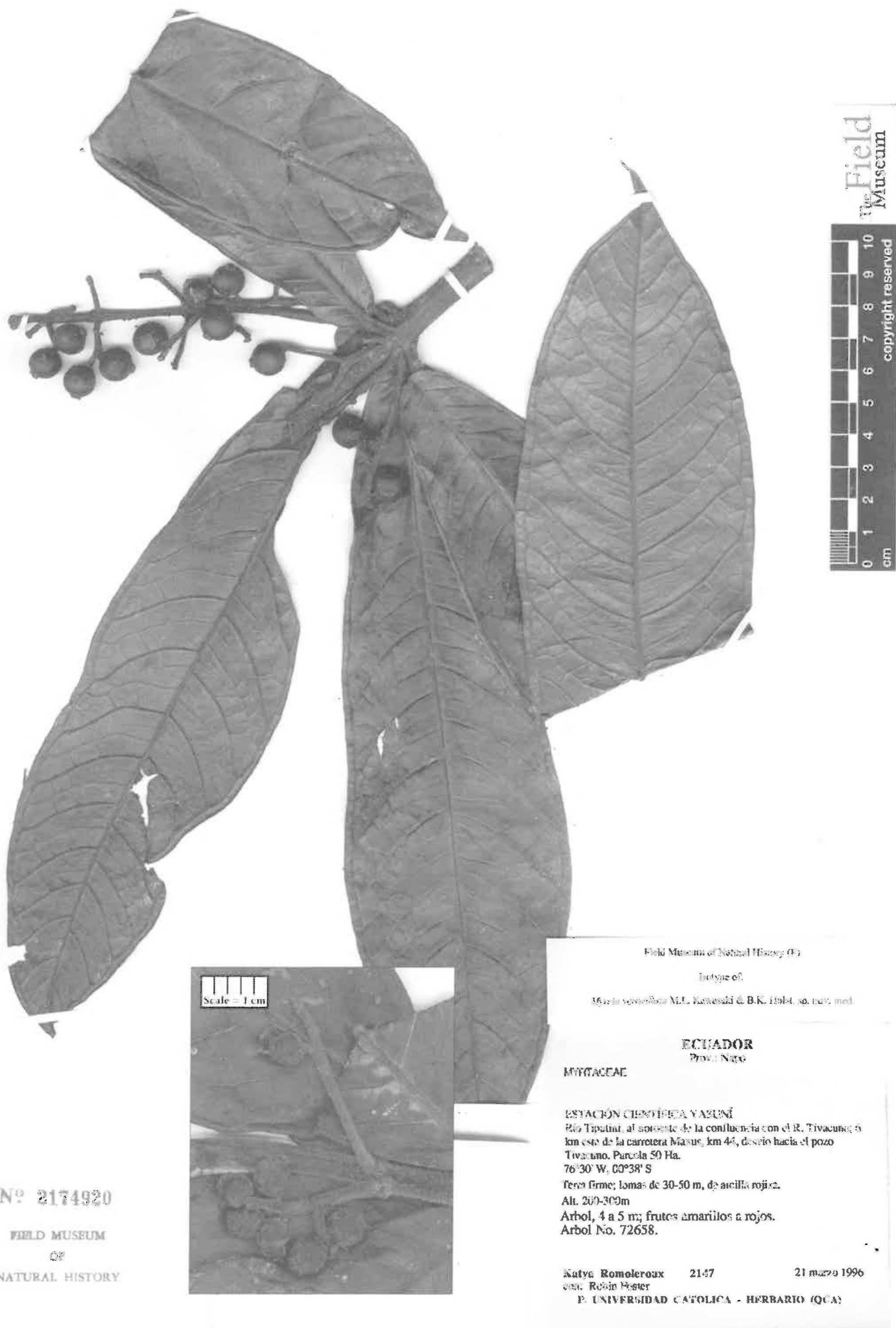
Myrcia verticillata M.L. Kawasaki & B.K. Holst, sp. nov. (**Fig. 5**). TYPE: ECUADOR. ORELLANA (Napo on label): Estación Científica Yasuní, Río Tiputini, NW of confluence with Río Tivacuno, 6 km E of Maxus road, Km 44, detour to Tivacuno well, parcela 50 ha, 00°38'S, 76°30'W, 200–300 m, 21 Mar 1996 (fr), *K. Romoleroux & R. Foster* 2147 (HOLOTYPE: QCA; ISOTYPES: F-2 sheets, SEL).

Frutex vel arbor, indumento brunneo vel flavo-brunneo; ramulis quadrangulatis; foliis verticillatis, oblanceolatis, coriaceis, 19–29 × 4–7.5 cm, abrupte acuminatis, siccatis atrobrunneis; paniculis 5–13 cm longis; baccis globosis, atropurpureis ubi matureis.

Shrub or tree 4–25 m tall, to ca. 20 cm dbh, the trichomes simple, brown to yellowish-brown; bark reddish, the stems quadrangular in cross section with rounded angles, densely pubescent. **Leaves** subsessile to short-petiolate, verticillate in 4-merous whorls; blades oblanceolate, 19–29 × 4–7.5 cm, coriaceous, the upper surface drying dark brown to brownish, puberulous, the lower surface paler, sparsely hirsute-pubescent, the trichomes present especially on the venation; apex abruptly acuminate; base obtuse; midvein hirsute, impressed above, convex below; lateral veins 15–20 pairs, these and major interconnecting tertiary veins impressed above, convex below; marginal veins 2, the innermost 2–4 mm from blade margin, similar in prominence to the lateral veins, the outermost less than 1 mm from margin; glands numerous, punctiform, indistinct above, evident below; petiole 3–9 mm long, stout, channeled, densely pubescent. **Inflorescences** paniculate, axillary, 5–13 cm long, the axes hirsutulous; bracts and bracteoles early deciduous, not seen. **Flowers** 5-merous; buds not seen; calyx-lobes ca. 1 × 2 mm, truncate to broadly rounded at apex, appressed-pubescent to puberulous without, glabrous within; petals, stamens, and style not seen; hypanthium not prolonged beyond the ovary; disk ca. 2 mm diam., hirsutulous. **Fruits** berries, globose, 1–1.7 cm diam., turning from green to yellow-orange to red, and finally purple-black (*Acevedo-Rdgz. & Cedeño* 7628), puberulous, crowned by the slightly overlapping calyx lobes; seeds 1 or 2, ca. 8–10 × 7–8 mm, the seed coat membranous; embryo myrcioid, the cotyledons leafy and folded, the radicle elongate, equaling the cotyledons in length.

Distribution.—This species is known only from northeastern Ecuador in Orellana province, in the region of Yasuní National Park; it occurs in primary, lowland wet forests, at 200–300 m elevation.

From all the other species of *Myrcia* in Ecuador (Holst 1999; Holst & Kawasaki 2008), *M. verticillata* is promptly recognized, even in sterile condition, by the large, oblanceolate, dark brown leaves (when dry), that are subsessile and verticillate, in tetramerous whorls, and by the quadrangular stems. Species of *Myrcia* with both opposite and verticillate leaves were described by Berg (1857) in Martius' *Flora Brasiliensis*, but at least in northern South America, *M. verticillata* is the only known species with leaves consistently in tetramerous whorls. *Myrcia verticillata* may be allied with the *Gomidesia* group of *Myrcia*; flowers are needed to confirm the relationship.



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Isotype of
Myrcia verticillata M.L. Kawasaki & B.K. Holst, sp. nov. ined.

ECUADOR
Prov. Napo

MYRTACEAE

ESTACION CERRO DE LA VASUNA
Rio Tiputini, al sudeste de la confluencia con el R. Tivacuna; a
km este de la carretera Masus, km 44, desvío hacia el pozo
Tivacuna. Parcela 50 Ha.
76°30' W, 00°38' S
Terro firme; lomas de 30-50 m, de arcilla roja.
Alt. 200-300m
Arbol, 4 a 5 m; frutos amarillos a rojos.
Arbol No. 72658.

Katya Romolerox 2147 21 marzo 1996
con: Robin Foster
P. UNIVERSIDAD CATOLICA - HERBARIO (QCA)

FIG. 5. *Myrcia verticillata* M.L. Kawasaki & B.K. Holst (Romolerox & Foster 2147: Isotype, F; inset from Neil et al. 8233, SEL).

Additional collections examined: **ECUADOR. Orellana:** Yasuní Forest Reserve, along road between Km 70 and 100, E of PUCE Scientific Station, 0°50.014'S, 76°20.518'W – 0°54.730'S, 76°13.304'W, 200 m, 2 Jul 1995 (fr), *P. Acevedo-Rodríguez & J.A. Cedeño* 7628 (SEL, US); Yasuní, Parque Nacional Yasuní, oil well Conoco-Amo 2, 00°57'S, 76°13'W, 230 m, 9–19 Jan 1988 (fr), *D. Neill et al.* 8233 (F, MO, SEL); Aguarico, Yasuní, Reserva Etnica Huaorani, Maxus road and pipeline construction project, Kms 98–99, 00°55'S, 76°13'W, 250 m, 18 Jun 1994 (fr), *N. Pitman & G. Romero* 299 (F, MO, QCNE, SEL); Estación Científica Yasuní, Río Tiputini, NW of confluence with Río Tivacuno, E of Repsol-YPF road, Km 7, detour to Tivacuno well, parcela 50 ha, column 29-02(2,3), 00°38'S, 76°30'W, 200–300 m, 17 Feb 2001 (fr), *G. Villa & L. Velez* 912 (F, QCA).

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